RAND DRUG POLICY RESEARCH CENTER
dprc Research Brief

Are Mandatory Minimum Drug Sentences Cost-Effective?

Mandatory minimum sentencing laws have been among the more popular crime-fighting measures of recent years. Such laws require that a judge impose a sentence of at least a specified length if certain criteria are met. For example, a person convicted by a federal court of possessing half a kilogram or more of cocaine powder must be sentenced to at least five years in prison.

Mandatory minimums have enjoyed strong bipartisan support. To proponents, their certainty and severity help ensure that incarceration's goals will be achieved. Those goals include punishing the convicted and keeping them from committing more crimes for a period of time, as well as deterring others not in prison from committing similar crimes. Critics, however, believe that mandatory minimums foreclose discretionary judgment where it may most be needed, and they fear these laws result in instances of unjust punishment.

These are all important considerations, but mandatory minimums associated with drug crimes may also be viewed as a means of achieving the nation's drug control objectives. As such, how do they compare with other means? Do they contribute to the central objective—decreasing the nation's drug consumption and related consequences—at a cost that compares favorably with other approaches? Jonathan P. Caulkins, C. Peter Rydell, William L. Schwabe, and James Chiesa have estimated how successful mandatory minimum sentences are, relative to other control strategies, at reducing drug consumption and drug-related crime.

The DPRC researchers focused on cocaine, which many view as the most problematic drug in America today. They took two approaches to mathematically model the market for cocaine and arrived at the same basic conclusion: *Mandatory minimum sentences are not justifiable on the basis of cost-effectiveness at reducing cocaine consumption or drug-related crime.* Mandatory minimums reduce cocaine consumption less per million taxpayer dollars spent than spending the same amount on enforcement under the previous sentencing regime. And either enforcement approach reduces drug consumption less, per million dollars spent, than putting heavy users through treatment programs. Mandatory minimums are also less cost-effective than either alternative at reducing cocaine-related crime. A principal reason for these findings is the high cost of incarceration.

REDUCING CONSUMPTION: MORE ENFORCEMENT AGAINST TYPICAL DEALERS

Caulkins, Rydell, and their colleagues first estimated the cost-effectiveness of additional expenditures on enforcement against the average drug dealer apprehended in the United States (whether that apprehension is by federal, state, or local authorities). Increased enforcement places additional costs on dealers, which they pass along to cocaine consumers in the form of higher prices. Studies have shown that higher cocaine prices discourage consumption. By mathematically modeling how cocaine market demand and supply respond to price, the researchers were able to estimate the changes in total cocaine consumption over 15 years for an additional million dollars invested in different cocaine control strategies. These consumption changes, discounted to present value, are shown by the first two bars in Figure 1.

Those bars show the results of spending a million dollars[1] on additional enforcement against a representative sample of drug dealers. As shown by the first bar, if that money were used to extend to federal mandatory minimum lengths the sentences of dealers who would have been arrested anyway, U.S. cocaine consumption would

[1]All cost calculations in this brief are in 1992 dollars. To convert costs in 1992 dollars to 1996 dollars (the latest year for which inflation data are available), multiply by 1.119. To convert kilograms of cocaine consumption reduced per million 1992 dollars spent to kilograms reduced per million 1996 dollars, divide by 1.119.

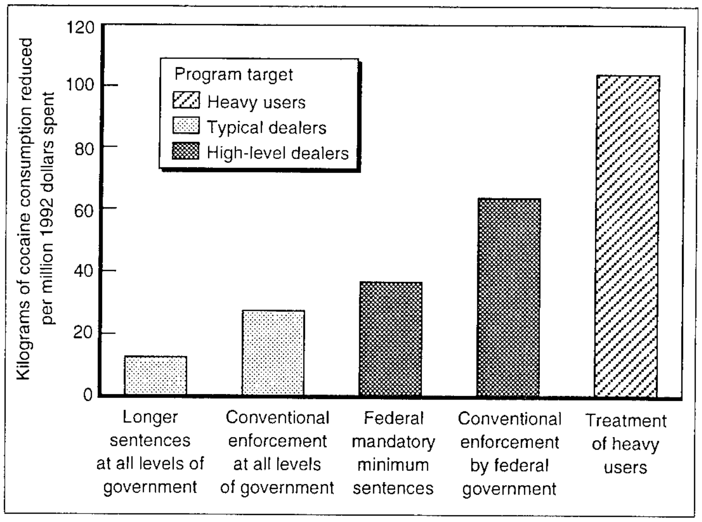


Figure 1—Cost-Effectiveness of Alternative Cocaine Control Strategies

be reduced by almost 13 kilograms.[2] If, however, the money were used to arrest, confiscate the assets of, prosecute, and incarcerate more dealers (for prison terms of conventional length), cocaine consumption would be reduced by over 27 kilograms. As a point of comparison, spending the million dollars to treat heavy users would reduce cocaine consumption by a little over 100 kilograms (rightmost bar).

The results from spending an additional million dollars can be extrapolated to multiples thereof. A case can thus be made for shifting resources from longer sentences to a broader mix of enforcement measures. A case might also be made for shifting resources to treatment, although legislators might find such a shift less palatable. In any event, extrapolation is valid only up to a point. These results certainly do not support shifting all drug control resources from one approach to another, e.g., from enforcement to treatment. Very large changes in enforcement levels or in the number of persons treated would change cocaine supply and demand relations in ways that are not predictable with much confidence.

REDUCING CONSUMPTION: MORE ENFORCEMENT AGAINST HIGHER-LEVEL DEALERS

The first two bars in Figure 1 represent enforcement approaches applied to a representative sample of drug dealers. Perhaps mandatory minimum sentences would be more cost-effective if they were applied only to higher-level dealers, who make more money and thus have more to lose from intensive enforcement. To approximate such a restriction, Caulkins and his colleagues limited the set of dealers analyzed to those prosecuted at the federal level who possess enough drugs to trigger a federal mandatory minimum sentence. Again, they analyzed how costs imposed on dealers influence cocaine market demand and supply. The results are shown in the dark bars in Figure 1.

Spending a million dollars on mandatory minimum sentences for higher-level dealers does indeed have a bigger effect on cocaine consumption than spending the same amount on either enforcement approach against typical dealers. Nonetheless, against any given type of dealer (or at any given level of government), mandatory minimums are less cost-effective than conventional enforcement. Moreover, although federal mandatory minimums do better relative to treating heavy users than do longer sentences for all dealers, treatment is still more cost-effective.

Why is conventional enforcement more cost-effective than mandatory minimums? Drug enforcement imposes costs on dealers through arrest and conviction, which includes seizure of drugs and other assets, and through incarceration, which involves loss of income. It turns out that, *per dollar spent*, the cost burden from seizures is greater. A million dollars spent extending sentences thus imposes less cost on dealers—and consequently reduces cocaine consumption less—than a million dollars spent on conventional enforcement, which includes asset seizures.[3]

REDUCING COCAINE-RELATED CRIME

Many Americans are worried about the crime associated with cocaine production, distribution, and use. Working with data on the causes of drug-related crime, Caulkins and his colleagues estimated the crime reduction benefits of the various alternatives. They found no difference between conventional enforcement and mandatory minimums in relation to property crime. Conventional enforcement, however, should reduce crimes against persons by about 70 percent more than mandatory minimums. But treatment should reduce serious crimes (against both property and persons) the most per million dollars spent—on the order of fifteen times as much as would the incarceration alternatives.

Why is treatment so much better? Most drug-related crime is economically motivated—undertaken, for example, to procure money to support a habit or to settle scores between rival dealers. The level of economically motivated crime is related to the amount of money flowing through the cocaine market. When a treated dealer stays

[2]Data on quantities possessed by convicted dealers are not readily available below the federal level, so for typical dealers, the researchers assessed, in lieu of true mandatory minimums, a program applying longer sentences to *all* who were convicted.

[3]As shown in earlier RAND research, treatment is more cost-effective than enforcement, even though the great majority of users revert to their cocaine habit following treatment. Treatment is so much cheaper than enforcement that many more users can be targeted for the same amount of money—so many more that the sum of the small individual effects expected are larger than the effects expected from enforcement.

off drugs, that means less money flowing into the market—therefore, less crime. When a dealer facing greater enforcement pressure raises his price to compensate for the increased risk, buyers will reduce the amount of cocaine they purchase. Money flow equals price times quantity bought. Which effect predominates—the rise in price or the drop in consumption? The best evidence suggests that they cancel each other out, so the total revenue flowing through the cocaine market stays about the same. The effect of the enforcement alternatives is therefore limited almost entirely to the relatively small number of crimes that are the direct result of drug consumption—crimes "under the influence."

SENSITIVITY OF THE RESULTS TO CHANGES IN ASSUMPTIONS

The values shown in Figure 1 are dependent, of course, on various assumptions the researchers made. If the assumptions are changed, the values change. As an example, the results are dependent on the time horizon of interest to those making decisions about cocaine control strategy. Figure 1, for example, ignores any benefits and costs accruing more than 15 years beyond program initiation. A 15-year horizon is a typical one for analyzing public-policy effects. But what if that horizon were closer?

Figure 2 shows the relative cost-effectiveness of treatment and the enforcement alternatives against typical dealers, analyzed when time horizons are set at various points from 1 to 15 years. At 15 years, the lines match the heights of the two short bars and the tallest bar in Figure 1. As the horizon is shortened, treatment looks worse, because treatment's costs, which accrue immediately, remain, while the benefits, which accrue as long as treated individuals reduce their consumption, are cut back. If the horizon is made short enough, long sentences look better, because the costs of additional years of imprisonment are

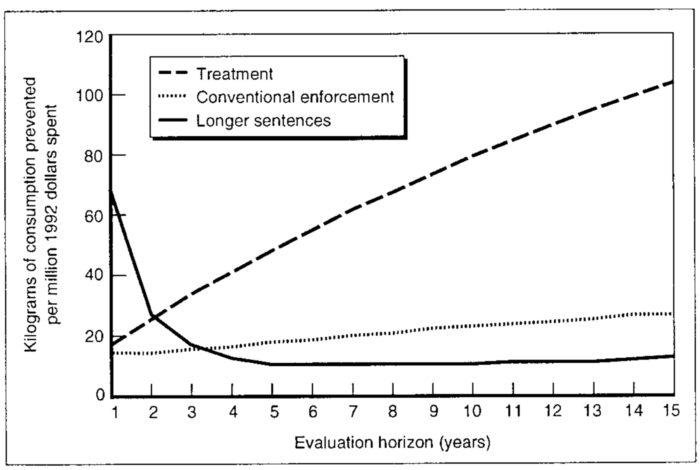
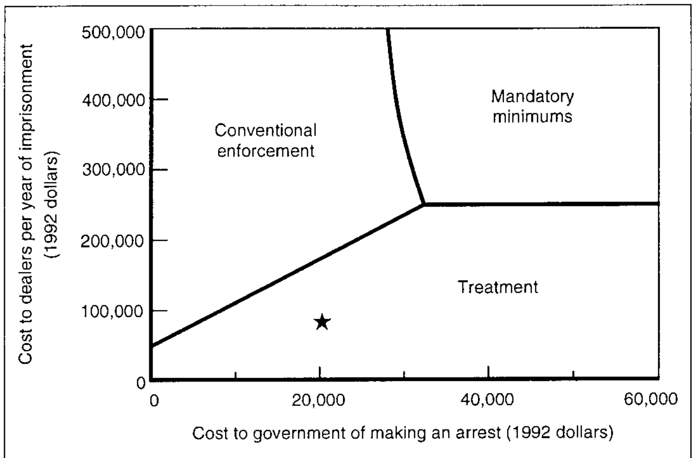


Figure 2—Cost-Effectiveness of Treating Heavy Users and Enforcement Against Typical Drug Dealers, for Different Evaluation Horizons

ignored, while the benefits remain. Those benefits, again, are the cocaine price increase and consumption decrease that occur as soon as the imprisonment risk increases. The time horizon must be shortened to three years before long sentences look preferable to additional conventional enforcement, and to little more than two years before they look preferable to treatment. Hence, longer sentences for typical drug dealers appear cost-effective only to the highly myopic.



NOTE: Star indicates values assumed for dark bars (federal offenders) in Figure 1.

Figure 3—Most Cost-Effective Strategy for Different Combinations of Values for Two Key Variables

More generally, large departures from the assumptions underlying the analysis are required for mandatory minimums to be the most cost-effective approach. Figure 3, for example, displays departures from two key assumptions underlying the results in Figure 1: that it costs the federal government $20,000 to arrest a dealer and that a dealer wants additional drug sales income amounting to $85,000 for risking an additional year of imprisonment. These two assumed values are depicted by the star in Figure 3. The bounded areas and labels indicate which program is the most cost-effective for any combination of substitutes for those two numbers. As the figure shows, mandatory minimums would be the most cost-effective alternative only if arrest cost were to exceed $30,000 and a dealer were to value his time at over $250,000 per year. Such figures would typify only those dealers who are both unusually difficult to arrest and at a fairly high level in the cocaine trade. For dealers costing less than $30,000 to arrest, cocaine control dollars would be better spent on further conventional enforcement. For dealers demanding less than $250,000 compensation for imprisonment risk, the money would be better spent treating heavy users.

Long sentences could thus be a smart strategy if selectively applied. Unfortunately, because mandatory minimum sentences are triggered by quantity of drug possessed, they are not selectively applied to the highest-level

dealers. Such dealers often do not physically possess the drugs they own and control; they hire others to carry the drugs and incur the associated risk.

CONCLUSION

Long sentences for serious crimes have intuitive appeal. They respond to deeply held beliefs about punishment for evil actions, and in many cases they ensure that, by removing a criminal from the streets, further crimes that would have been committed will not be. But in the case of black-market crimes like drug dealing, a jailed supplier is often replaced by another supplier. Limited cocaine control resources can, however, be profitably directed toward other important objectives—reducing cocaine *consumption* and the violence and theft that accompany the cocaine market. If those are the goals, more can be achieved by spending additional money arresting, prosecuting, and sentencing dealers to standard prison terms than by spending it sentencing fewer dealers to longer, mandatory terms. The DPRC researchers found an exception in the case of the highest-level dealers, where sentences of mandatory minimum length appear to be the most cost-effective approach. However, it is difficult to identify those dealers solely by quantity of drug possessed. It might be easier to identify them if, in passing sentence, the criminal justice system could consider additional factors, e.g., evidence regarding a dealer's position in the distribution hierarchy. Such factors, ignored by mandatory minimums, can be taken into account by judges working under discretionary sentencing.

RAND research briefs summarize research that has been more fully documented elsewhere. This research brief describes work sponsored, through DPRC, by Richard B. Wolf of Richland Mills and by The Ford Foundation; it is documented in Mandatory Minimum Drug Sentences: Throwing Away the Key or the Taxpayers' Money? *by Jonathan P. Caulkins, C. Peter Rydell, William L. Schwabe, and James Chiesa, MR-827-DPRC, 1997, 217 pp., $15.00, ISBN: 0-8330-2453-1, available from RAND Distribution Services (Telephone: 310-451-7002; FAX: 310-451-6915; or Internet: order@rand.org). Abstracts of all RAND documents may be viewed on the World Wide Web (http://www.rand.org). Publications are distributed to the trade by National Book Network. RAND is a nonprofit institution that helps improve public policy through research and analysis; its publications do not necessarily reflect the opinions or policies of its research sponsors.*

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1700 Main Street, P.O. Box 2138, Santa Monica, California 90407-2138 • Telephone 310-393-0411 • FAX 310-393-4818
1333 H St., N.W., Washington, D.C. 20005-4707 • Telephone 202-296-5000 • FAX 202-296-7960